

AGRI MOTIVE PRODUCTS, INC.

PLANTER MONITOR SYSTEM ADDENDUM Software ver5.0Upgrade



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VANGUARD PLANTER MONITOR SYSTEM Software ver5.0 Upgrade

New Features in ver5.0

- Hopper Pressure Sensor Input & Alarms
- Population Filter
- Population Scaling Factor

This addendum to the Planter System manual addresses the new software features that are included in Version 5.0. Please note the reference in this addendum to the page numbers of the Planter System manual for further information.



SETUP MODE

Reference: Page 13 Seed Manager Operators Manual

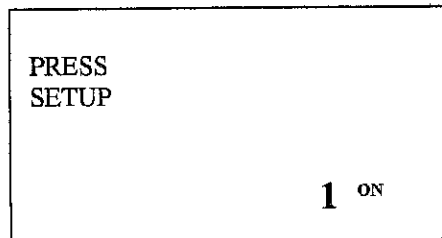
Figure 19 ver5.0
Customer Setup Parameter Chart

- 1 Ground Speed Sensor Type
 - 2 Shaft Speed Sensor Type
 - 3 Hopper Level 1 Sensor Enable
 - 4 Hopper Level 2 Sensor Enable
 - 5* Hopper Pressure 1 Sensor Enable
 - 6* Hopper Pressure 2 Sensor Enable
 - 7* Population Filter Value
 - 8* Population Scaling Factor
 - 9 Boot Version Number
 - 10 Flash Version Number
- * New For Version 5.0 Software

5. Pressure 1 Sensor Enable

This parameter enables or disables the hopper pressure sensor #1. This is identified on the display by the message "PRESS", "1", and the flashing SETUP icon. To enable/disable, press the SET switch to select ON or OFF respectively. Figure 1 below shows PRESSURE 1 enabled.

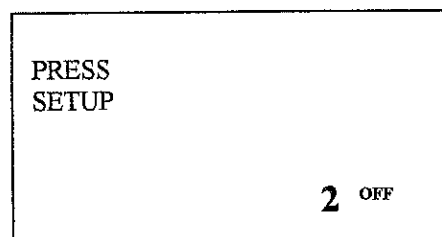
Figure 1



6. Pressure 2 Sensor Enable

This parameter enables or disables the hopper pressure sensor #2. This is identified on the display by the message "PRESS", "2", and the flashing SETUP icon. To enable/disable, press the SET switch to select ON or OFF respectively. Figure 2 below shows PRESSURE 2 disabled.

Figure 2

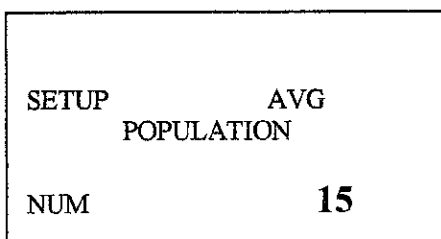




7. Population Filter Value

In certain applications the Seed Manager®, due to its rapid update rate, might exhibit fluctuations in population, spacing, and singulation that are undesirable to the operator. The population filtering option applies an averaging filter to the population, seed spacing, and singulation calculations. The filter values range from 0 to 99, with 0 having no filtering effect and 99 being the maximum filtering value. Use the **SET** and **SELECT** switches to adjust the filtering value. Figure 3 shows a light filter value of 15.

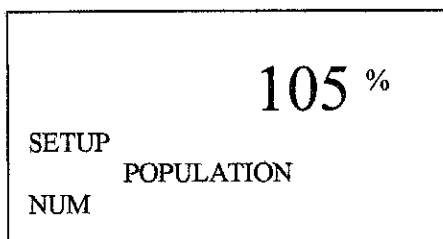
Figure 3



8. Population Scaling Factor

The population scaling factor allows the operator to make fine adjustments in the readout of population, spacing, and singulation on a percentage basis. This value is adjustable from 1% to 999% with the factory value being 100%. Use the **SET** and **SELECT** switches to adjust to the desired population scaling factor. Figure 4 shows a population scaling factor of 105%, or a 5% increase in the population and spacing readout.

Figure 4



9. Boot Version Number

DICKEY-john's Service department may request the customer to observe, record, and report back the four different 4-digit numbers (to identify the "boot memory" software version) in the unlikely event field problems occur.

The first 4-digit number shows on the upper numeric display at the same time a "bl" identifier appears on the lower numeric display. Record this number, then press and release the **SELECT** switch to step to the "b2", "b3", and "bc" numbers, recording each 4-digit number along with its identifier. (To return to "bl", press **SELECT** again.) Press the **SETUP** switch to advance to the next constant.

OPERATOR'S MANUAL ADDENDUM



10. Flash Version Number

DICKEY-john's Service department may request the customer to observe, record, and report back the four different 4-digit numbers (to identify the "flash memory" software version) in the unlikely event field problems occur.

The first 4-digit number shows on the upper numeric display at the same time an "F1" identifier appears on the lower numeric display. Record this number, then press and release the SELECT switch to step to the "F2", "F3", and "Fc" numbers, recording each 4-digit number along with its identifier. (To return to "F1", press SELECT again.)

Pressing the SETUP switch again causes a return to the first Customer Setup parameter, Ground Speed Sensor Type. To exit the Customer Setup Mode, power off the console.

OPERATOR'S MANUAL ADDENDUM



SETUP CONSTANTS

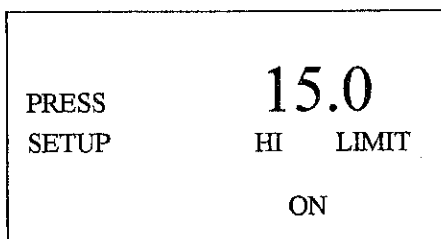
Reference: Page 17 Seed Manager Operators Manual

SETUP MODE				
Order	CONSTANT Name	Default	Minimum	Maximum
1	Row Status	ON	N/A	N/A
2	High Population Warning Limit	0034.0	0000.0	9999.9
3	Lo Population Warning Limit	0026.0	0000.0	9999.9
4	Number of Rows	N/A	1	36
5	Row Width	030.0	001.0	999.9
6	Implement Width	N/A	0001.0	9999.9
7	Shaft Constant	000.00	000.0	999.9
8	Hi Shaft Speed Warning Limit	0065	0000	9999
9	Lo Shaft Speed Warning Limit	0045	0000	9999
10*	Hi Pressure Warning Limit	000.0	000.0	999.9
11*	Lo Pressure Warning Limit	000.0	000.0	999.9
12	Distance Calibration	6096	250	9999
13	Sensor Self-Test	N/A	N/A	N/A
14	Implement Type Configuration	01	01	N/A
15	English/Metric Units Selection	English	N/A	N/A

* New For Version 5.0 Software

10. Hi Pressure Warning Limit

The Hi Pressure Warning Limit is entered in oz/in² (kPa) and applies to both PRESSURE sensors if used. The Hi and Lo warning limits are accessible only if PRESSURE 1 and/or PRESSURE 2 sensors have been enabled in the customer setup mode. Setting the Hi Pressure Warning Limit will cause the audible alarm to sound when the pressure exceeds the value that has been entered. Utilize the SELECT and SET switch to enter the Hi Pressure Warning Limit. The Hi Pressure Warning Limit can be enabled or disabled by selecting the ON or OFF symbol after the rightmost digit. Pressing the SET switch will toggle the status of the warning from ON to OFF. Figure 5 shows a Hi Pressure Warning Limit of 15 oz/in² with the alarm turned ON.





11. Lo Pressure Warning Limit

The Lo Pressure Warning Limit is entered in oz/in² (kPa) and applies to both PRESSURE sensors if used. The Lo and Hi warning limits are accessible only if PRESSURE 1 and/or PRESSURE 2 sensors have been enabled in the customer setup mode. Setting the Lo Pressure Warning Limit will cause the audible alarm to sound when the pressure falls below the value that has been entered. Utilize the **SELECT** and **SET** switch to enter the Lo Pressure Warning Limit. The Lo Pressure Warning Limit can be enabled or disabled by selecting the ON or OFF symbol after the rightmost digit. Pressing the **SET** switch will toggle the status of the warning from ON to OFF. Figure 6 shows a Lo Pressure Warning Limit of 5 oz/in² with the alarm turned OFF.

PRESS	5.0
SETUP	LO LIMIT
	OFF

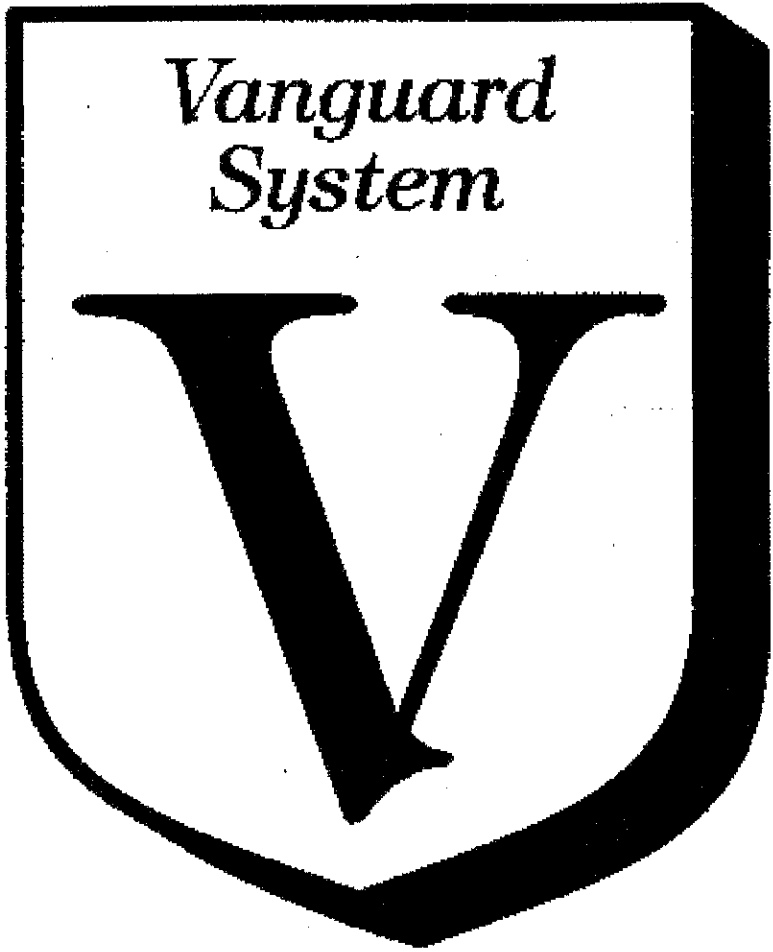


SETUP RECORD SHEET

Parameter Name	Entered Value
ROW Status	_____
POPULATION HI LIMIT	_____
POPULATION LO LIMIT	_____
NUMBER of ROWS	_____
ROW WIDTH	_____
IMPLEMENT WIDTH	_____
Shaft Speed Constant	_____
RPM HI LIMIT	_____
RPM LO LIMIT	_____
Hi Pressure Warning Limit	_____
Lo Pressure Warning Limit	_____
Distance Calibration Constant	_____
IMPLEMENT Type Configuration	_____
English/Metric	_____

Parameter Name	Entered Value
ROW Status	_____
POPULATION HI LIMIT	_____
POPULATION LO LIMIT	_____
NUMBER of ROWS	_____
ROW WIDTH	_____
IMPLEMENT WIDTH	_____
Shaft Speed Constant	_____
RPM HI LIMIT	_____
RPM LO LIMIT	_____
Hi Pressure Warning Limit	_____
Lo Pressure Warning Limit	_____
Distance Calibration Constant	_____
IMPLEMENT Type Configuration	_____
English/Metric	_____

VANGUARD VM2500
OPERATORS MANUAL ADDENDUM





Vanguard VM2500 Software ver6.0 Upgrade

New Features in ver6.0

- **Bargraph Lock and Hold**
- **Revised Constants List**
- **Expanded Error Codes**
- **Additional Troubleshooting Diagnostics**

This addendum to the VM2500 manual addresses the new software features and enhancements that are included in version 6.0. Please note the reference in this addendum to the page numbers of the VM2500 manual for further information.



SETUP CONSTANTS

Reference: Page 17 Vanguard VM2500 Operators Manual

SETUP MODE				
Order	CONSTANT Name**	Default	Minimum	Maximum
1	Implement Type Configuration	01	01	N/A
2	Row Status	ON	N/A	N/A
3	High Population Warning Limit	0034.0	0000.0	9999.9
4	Lo Population Warning Limit	0026.0	0000.0	9999.9
5	Number of Rows	N/A	1	36
6	Row Width	030.0	001.0	999.9
7	Implement Width	N/A	0001.0	9999.9
8	Shaft Constant	000.00	000.0	999.9
9	Hi Shaft Speed Warning Limit	0065	0000	9999
10	Lo Shaft Speed Warning Limit	0045	0000	9999
11*	Hi Pressure Warning Limit	000.0	000.0	999.9
12*	Lo Pressure Warning Limit	000.0	000.0	999.9
13	Distance Calibration	6096	250	9999
14	Sensor Self-Test	N/A	N/A	N/A
15	English/Metric Units Selection	English	N/A	N/A

* New For Version 5.0 Software

**Set up constant order has been changed.



P. ERROR CODE Pressure Failure

Pressure sensor missing.

Probable Cause

1. Pressure sensor is not connected.
2. Tractor or planter harness is pinched or cut.
3. Pressure sensor harness is pinched or cut.

Corrective Action

1. Connect Pressure sensor to planter harness.
2. Locate short or cut and repair by splicing, soldering, and sealing wire.
3. Locate short or cut and repair by splicing, soldering, and sealing wire.



M. ERROR CODE E 081

Power interrupt.

Probable Cause

1. Cut or pinched harness.
2. +12 Seed Smart Sensor power wire shorted to ground.
3. Console power not directly connected to battery.

Corrective Action

1. Locate short or cut and repair by splicing, soldering, and sealing wire.
2. Locate short or cut and repair by splicing, soldering, and sealing wire.
3. Run Seed Manager power directly from battery. Do not supply console power off of accessory power or through the ignition switch.

N. ERROR CODE E 082

LCD fault.

Probable Cause

1. Embedded software.

Corrective Action

1. Note the 2 digit display and report results to factory service.

O. ERROR CODE Hopper Failure

Hopper sensor missing.

Probable Cause

1. Hopper sensor is not connected.
2. Tractor or planter harness is pinched or cut.
3. Hopper sensor harness is pinched or cut.

Corrective Action

1. Connect Hopper sensor to planter harness.
2. Locate short or cut and repair by splicing, soldering, and sealing wire.
3. Locate short or cut and repair by splicing, soldering, and sealing wire.



TROUBLESHOOTING

Additional Troubleshooting Diagnostics

Troubleshooting diagnostics are in addition to previous troubleshooting diagnostics on p. 45-47 of the VM2500 Operators Manual

K. ERROR CODE E 067

More than 18 Sensors connected to either P1 or P2.

Probable Cause

1. Too many sensors connected on one line.
2. The planter configuration does not match the configuration of the VM2500.

Corrective Action

1. Distribute sensors evenly between P1 and P2.
2. Verify the configuration of the planter versus the configuration on the VM2500.

L. ERROR CODE E 080

Bus fault.

Probable Cause

1. Embedded software.

Corrective Action

1. Note the 2 digit display and report results to factory service.



ALARMS & ERROR CODES

Reference: Page 33 VM2500 Operators Manual

Figure 50 ver6.0 Seed Manager Error Codes

Error Codes Listed in Priority Order

<u>Error Code</u>	<u>Description</u>
E082*	LCD fault
E081*	Power interrupt
E080*	Bus Fault Error
E067*	Too many sensors connected to either P1 or P2
E066	Number of rows exceeds number of sensors detected (Seed Smart® sensors only)
E065	Number of rows less than the number of sensors detected
E064	No seed sensor detected
E063	Seed Smart® sensor blocked light path detected during Self-Test
E062	Seed Smart® sensor overcounted during Self-Test
E060	Seed Smart® sensor undercounted during Self-Test
E065	Hopper Sensor- too many sensors connected
	Hopper Failure- Hopper sensor missing
E065	Pressure Sensor- too many sensors connected
	Pressure Failure- Pressure sensor missing
E020	Seed Sensor supply fault to ground
E021	Seed Sensor supply fault to battery

* New for Version 6.0 Software

After VM2500 goes through a Self-Test it will display any error codes before going into the operate mode. Error codes will be sorted by priority, and within each error code all row numbers associated with that error are displayed. When multiple error codes are present, the "E" prior to the error code will flash. Pressing the **ALARM** switch once cycles to the next error code to be displayed. If there are multiple rows associated with a particular error code, the unit will automatically cycle through those rows. By pressing the **ROW SELECT** switch, the display will stop on the current row and only increment to the next row when the **ROW SELECT** switch is pressed.

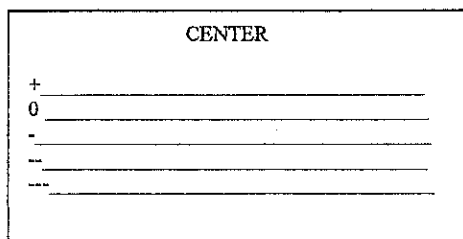


OPERATE MODE

D. Bargraph Lock & Hold

The bargraph lock and hold function will allow the bargraph to be stopped during the cycling of the bottom display from one planter section to another. For example, if the VM2500 were set up for a 31-row planter we would have 10 left, 11 center, and 10 right. The monitor will default to cycling through these three planter sections (left, center, and right).

While the display shows any one of these sections, the **START/STOP** or the **SELECT** switch can be pushed to lock and hold the bottom display on the section to be viewed. The **SELECT** switch can now be pushed to cycle through the various sections. While in the lock and hold mode the section that is being held will flash (left, center, right, front, rear, etc.) to indicate the unit is in the lock and hold mode. Pressing the **START/STOP** switch once again will allow the monitor to resume cycling through the sections automatically.





SETUP RECORD SHEET

Parameter Name	Entered Value
IMPlément Type Configuration	_____
ROW Status	_____
POPULATION HI LIMIT	_____
POPULATION LO LIMIT	_____
NUMber of ROWS	_____
ROW WIDTH	_____
IMPlément WIDTH	_____
Shaft Speed Constant	_____
RPM HI LIMIT	_____
RPM LO LIMIT	_____
Hi Pressure Warning Limit	_____
Lo Pressure Warning Limit	_____
Distance Calibration Constant	_____
English/Metric	_____

Parameter Name	Entered Value
IMPlément Type Configuration	_____
ROW Status	_____
POPULATION HI LIMIT	_____
POPULATION LO LIMIT	_____
NUMber of ROWS	_____
ROW WIDTH	_____
IMPlément WIDTH	_____
Shaft Speed Constant	_____
RPM HI LIMIT	_____
RPM LO LIMIT	_____
Hi Pressure Warning Limit	_____
Lo Pressure Warning Limit	_____
Distance Calibration Constant	_____
English/Metric	_____

